



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------|-------------|----------------------|---------------------|------------------|
| 10/719,276 | 11/20/2003 | Phuong-Nghi Lam | Q169-US1 | 3190 |
| 31815 | 7590 | 10/22/2007 | EXAMINER | |
| MARY ELIZABETH BUSH | | | WALKER, KEITH D | |
| QUALLION LLC | | | ART UNIT | PAPER NUMBER |
| P.O. BOX 923127 | | | 1795 | |
| SYLMAR, CA 91392-3127 | | | MAIL DATE | |
| | | | 10/22/2007 | |
| | | | DELIVERY MODE | |
| | | | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | |
|------------------------------|-----------------|--------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/719,276 | LAM ET AL. |
| | Examiner | Art Unit |
| | Keith Walker | 1745 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 12 July 2007.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-3,5,7-22,24,25 and 27 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-3,5,7-9,12-22,24,25 and 27 is/are rejected.
- 7) Claim(s) 10 and 11 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

Response to Amendment

Claims 1-3, 5, 7-22, 24, 25 & 27 are pending examination as discussed below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-3, 5, 7, 8, 13-17, 19-22, 24 & 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munshi et al. (2003/0211383 A1) in view of Smesko et al. (US 5,716,728).

With respect to claims 1-3, 5, 7, 8, 13-17, 20-22, 24, 27, Munshi et al. teach a primary lithium battery comprising a lithium anode, a CF_x (fluorinated carbon) cathode and a non-aqueous electrolyte comprising lithium bis(oxalato)borate. See paragraphs 20, 24. Munshi et al. do not specifically disclose the component having a decomposition voltage of between about 1 V and the battery discharge voltage, the battery discharge voltage being higher than 1 V and the actual capacity of the battery. However, it is the position of the examiner that such properties are inherent, given that both Munshi et al. and the present application utilize the same chemistry in the battery. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature is

necessarily present in that which is described in the reference. In re Robertson, 49 USPQ2d 1949 (1999).

However, Munshi et al. do not disclose the total capacity of cathodes is less than the total capacity of the anodes in the battery.

Smesko et al. teach an alkali metal electrochemical cell, wherein the anode-to-cathode capacity ratio of about 1.03 such that the energy density and gravimetric energy of the battery are improved. See abstract, Column 1, Lines 57-67; claim 1.

Therefore, it would have been obvious to one of ordinary skill in the art to have one or more cathodes having a total capacity less than the total capacity of the one or more anodes in the battery of Munshi, because Smesko et al. teach the resulting energy density and gravimetric energy of the battery can be improved.

With respect to claims 19, Munshi et al. teach the use of polyethylene oxide as the electrolyte. See paragraph 26.

2. Claims 1, 5, 8, 12-22 & 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skotheim (US 5,462,566) in view of Smesko et al. (US 5,716,728).

With respect to claims 1, 5, 8, 12-17, 20-22 & 27, Skotheim et al. teach a primary lithium battery comprising a lithium anode, a carbon cathode and a non-aqueous electrolyte comprising carbon disulfide. See Column 6, Lines 16-26. Skotheim does not specifically disclose the component having a decomposition voltage of between about 1 V and the battery discharge voltage, the battery discharge voltage being higher than 1 V and the actual capacity of the battery. However, it is the position of the

Art Unit: 1745

examiner that such properties are inherent, given that both Skoheim and the present application disclose the same chemistry in the battery. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature *is necessarily present in that which is described in the reference*. In re Robertson, 49 USPQ2d 1949 (1999).

However, Munshi et al. do not disclose the total capacity of cathodes is less than the total capacity of the anodes in the battery.

Smesko et al. teach an alkali metal electrochemical cell, wherein the anode-to-cathode capacity ratio of about 1.03 such that the energy density and gravimetric energy of the battery are improved. See abstract, Column 1, Lines 57-67; claim 1.

Therefore, it would have been obvious to one of ordinary skill in the art to have one or more cathodes having a total capacity less than the total capacity of the one or more anodes in the battery of Munshi, because Smesko et al. teach the resulting energy density and gravimetric energy of the battery can be improved.

With respect to claims 18, Skoheim et al. teach addition of propylene carbonate in the polymer electrolyte. See Column 4, Lines 59-67.

With respect to claims 19, Skoheim et al. teach the use of polymer electrolyte. See Column 6, Lines 16-26.

3. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Munshi et al. (2003/0211383 A1) and Smesko et al. (US 5,716,728) as applied to 1-3, 5, 7, 8,

13-17, 19-22, 24 & 27 above, and further in view of Schmidt et al. (US 2002/0183800 A1).

Munshi et al. and Smesko et al. disclose a primary battery as described above in Paragraph 6. However, Munshi and Smesko do not disclose the one or more cathodes include vanadium oxide.

Schmidt et al. teach a primary battery, wherein a hybrid CF_x -vanadium oxide is used as the cathode active material to yield high energy density and high discharge rate. See paragraphs 6,46,75 and claim 3.

Therefore, it would have been obvious to one of ordinary skill in the art to add vanadium oxide onto the cathode of Munshi and Smesko, because Schmidt et al. teach the use of hybrid CF_x -vanadium oxide electrode to achieve high energy density and high discharge rate.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skotheim (US 5,462,566) and Smesko et al. (US 5,716,728) as applied to claims 1, 5, 8, 12-22 & 27 above, and further in view of Tadeuchi et al. (US 5,874,184).

Skotheim et al. and Smesko et al. disclose a primary battery as described above in Paragraph 7. However, Skotheim and Smesko do not disclose the one or more compounds selected from the group consisting of vinylene carbonate and vinyl ethylene carbonate.

Takeuchi et al. teach a polymer electrolyte battery, wherein the cathode comprises lithium or lithium alloy and the anode comprises a carbon material. The

organic compound that can be added as a plasticizer in the solid polymer electrolyte includes ethylene carbonate, propylene carbonate, diethyl carbonate and vinylene carbonate. See Column 7, Lines 59-65; Column 20, Lines 30-51. Evidently, ethylene carbonate, propylene carbonate, diethyl carbonate and vinylene carbonate are considered functionally equivalent plasticizer for the polymer electrolyte.

Therefore, it would have been obvious to one of ordinary skill in the art to substitute vinylene carbonate for the propylene carbonate in the polymer electrolyte disclosed by Skoheim and Smesko.

Allowable Subject Matter

5. Claims 10 & 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 10 would be allowable because the prior art does not disclose or suggest the component is selected form the group consisting of lithium cyclopentadienide and lithium tetramethylcyclopentadienide.

Claim 11 would be allowable because the prior art does not disclose or suggest the compound includes vinyl sulfolane.

Response to Arguments

Applicant's arguments filed 7/12/07 have been fully considered but they are not persuasive. Applicant's argument that an inventor would not be motivated to modify a

battery using a LiBOB salt with the disclosure of Smesko is considered opinion and no evidence is supplied to support this opinion. Applicant has not provided any evidence that "a reasonable expectation of success" does not exist when combining the teachings of Munshi with Smesko. As such, the claimed invention is considered obvious over the combined teachings of the prior art.

Applicant argues Skotheim teaches a secondary battery and the claims are drawn to a primary battery and therefore the prior art does not apply. In the preamble, defining the type of battery as a "primary battery" is considered intended use of the battery. Since the body of the claim fully sets forth all the limitations of the claimed invention and the preamble does not alter the structural difference of the claimed invention but only states the intended use of the battery, the preamble is not considered a positive limitation that further defines the claimed invention (MPEP 2111.02). Since a primary battery is intended for only a single use and a secondary battery can be used as a single use, this recitation of "a primary battery" is seen as intended use that is met by the secondary battery of Skotheim. The structural elements of the claim are met by the prior art and therefore are considered obvious over the teachings of Skotheim.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 1745

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith Walker whose telephone number is 571-272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Walker

MARK RUTH KOSKY
PRIMARY EXAMINER

Mark Ruth Kosky 9/24/07